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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte Malone, et al.
Appeal No. _____

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NOV 19 2003

GROUP 3600

Applicant: Malone, et al.
Serial No.: 10/002,049
Filed: November 2, 2001
Group Art Unit: 3677
Title: **LOCK ROD CLUTCH FOR OVEN LATCH**
Examiner: Dinesh N. Melwani
Conf. No.: 4375
Attorney Docket: KPF-54

Cincinnati, Ohio

November 10, 2003

Mail Stop Appeal Brief--Patents
Commissioner for Patents
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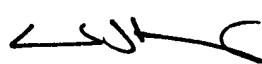
BRIEF ON APPEAL

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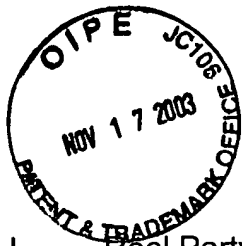
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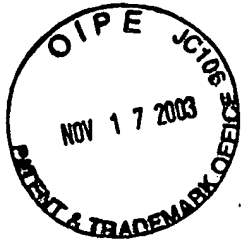
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BRIEF ON APPEAL

I. Real Party In Interest

The subject application is owned by France/Scott Fetzer Company of Westlake, Ohio, which is the assignee of the present invention.

II. Related Appeals and Interferences

There are no related appeals or interferences known to Applicant, the Applicant's legal representative, or to the assignee which will directly affect or be directly affected by, or have a bearing on the decision of the Board in the present appeal.

III. Status of the Claims

Original claims 1-18, filed with this application, were subjected to a two-way restriction, between invention 1 (claims 1-17), which corresponded to originally filed Figs. 1-5, and invention 2 (claim 18), which corresponded to originally filed Figs. 6-7. Claims 1-17 directed to invention 1 were elected for prosecution. In a first Office Action dated October 23, 2002, claims 1-6 were rejected under 35 U.S.C. §102(b) as anticipated, independently, by both Siegel and Fox. Claims 7-17 were rejected under 35 U.S.C. §103(a) over Fox in view of Staples.

In an amendment filed January 23, 2003, Applicant cancelled original claim 18, amended claims 1 and 7, and added new claims 19-23.

In a final Office Action dated April 8, 2003, claims 1 and 7 were objected to as not having proper antecedent basis for "the oven door" and "the oven", and claims 1-17 and 19-23 were rejected under 35 U.S.C. §102(b) as anticipated by Siegel.

In an amendment filed on July 30, 2003, Applicant cancelled claims 1-6 and claims 19-23, and amended claim 7.

In an Advisory Action dated September 2, 2003, the Examiner maintained his rejection of pending claims 7-17 under 35 U.S.C. §102(b) as anticipated by Siegel, but indicated that the amendments to claim 7 would be entered.

Applicant filed a Notice of Appeal on September 8, 2003.

IV. Status of Amendments

Before the final rejection dated April 8, 2003, originally filed claim 7 was amended from a dependent form to an independent form. After the final rejection, claim 7 was again amended to overcome the objection related to the lack of antecedent basis for "the oven door". Both amendments have been entered.

V. Summary of the Invention

The present invention is directed generally towards an oven door lock 16 including a locking mechanism 78 capable of locking a closed, latched oven door 22 at a temperature substantially different from that at which it unlocks (Applicant's specification, page 3, lines 16-19; Fig.1). Specifically, the disclosed door locking mechanism 78 generally includes a clutch mechanism 79 comprising a thermally responsive element 66, a clutch 77, and a lock member 72, and a first spring 45 contacting lock member 72 (Figs. 2 and 2A). The thermally responsive element 66 is in engagement with the lock member 72 via the clutch 77 to cause the desired ascent and descent of lock member 72, i.e., locking and unlocking the latched oven door during operation (Applicant's specification, page 3, lines 20 through page 4, line 4; Figs. 2 and 2A).

The disclosed thermally responsive element generally has a first end 84 and a second end 70 (Applicant's specification, page 4, lines 5-6; Fig.2). The first end 84 is generally secured to the door locking mechanism and the second end 70 defines a second side of clutch 77, which may take the form of a slot 80, and which is in

engagement with the first end 76 of lock member 72 (Figs. 2 and 2A). In one embodiment, slot 80 is elongated in shape (Fig.2), and thermally responsive element 66 may be a bimetallic leaf whose slot 80 is slidably and inseparably engaged with the lock member 72 (Applicant's specification, page 4, lines 7-11; Figs. 2 and 2A).

As disclosed, lock member 72, which may be a cylindrical lock rod type structure, generally includes a first end 74 and a second end 76. First end 74 defines the first side of clutch 77 in the form of a keyed aperture 75, which is in engagement with slot 80 in the thermally responsive element 66 (Applicant's specification, page 4, lines 12-14; Figs.2 and 2A). Keyed aperture 75 may be an annular recess along the axial surface of lock member 72 (Fig.5), which recess length can be determined by the desired difference between the locking and unlocking temperatures of the oven door (Applicant's specification, page 4, lines 16-18).

The disclosed oven door locking mechanism 78 also generally includes a latch mechanism 18 defining a lock hole 110 therein to receive lock member 72 in mounting bracket 26 (Applicant's specification, page 3, lines 19-21; Fig.4). Lock hole 110 may be bare or include a receiver member 73 such as a bushing, so as to receive first end 74 of lock member 72 when the oven door 22 is in a latched, locked state (Applicant's specification, page 5, lines 4-11; Figs. 4 and 5). First spring 45 is affixed to mounting bracket 26 while contacting lock member 72 (Applicant's specification, page 10, lines 6-9; Figs 2A and 3).

During operation, when the oven 10 is heated to elevated temperatures, such as in a self-cleaning mode or during normal cooking, the disclosed clutch mechanism 78 controls locking and unlocking temperatures (Applicant's specification,

page 17, lines 17-19). At the elevated temperature, the thermally responsive element 66 expands or deflects into engagement with lock member 72, causing the lock member 72 to ascend toward the lock hole 110 on the latch mechanism 18 (Fig. 4 and 5). When lock member 72 ascends into the lock hole 110, door 22 is locked closed, preventing latch mechanism 18 from moving from a latched state to an unlatched state (Figs.4 and 5). Thus, oven 22 has achieved a latch locked state, at a desired locking temperature based upon the selected dimension, and/or thermal properties of thermally responsive element 66 (Applicant's specification, page 17, line 20 through page 18, line 4).

When the cooking or self-cleaning cycle is complete and the heating source is removed, oven 10 will cool down and oven door 22 will unlock. During cooling, as the temperature decreases, the disclosed thermally responsive element 66 contracts and retracts, traversing the entire length of the keyed aperture 75 on lock member 72. During traversal, lock member 72 remains in its locked state or in the lock hold due to the frictional force exerted upon it by first spring 45. After traversal, the continual contractile motion of the thermally responsive element gradually pulls the lock member in the direction of retraction, thereby overcoming the counteractive frictional force exert on it by the first spring. Such motion causes lock member 72 to descend and release from lock hole 110, thereby unlocking oven door 22 (Applicant's specification, page 18, lines 6-16). Thus, the length of distance of traversed keyed aperture 75 coupled with the retraction characteristics of thermally responsive element 66 and the frictional force of first spring 45, will allow a unlocking temperature to be substantially lower than the temperature at which the oven door 22 locks (Applicant's

specification, page 6, lines 9-12). Thus, the difference in lock and unlock temperature can be controlled by the length or distance of keyed aperture 75 that the bimetallic leaf must traverse during the heating and cooling cycles of oven 10 (Applicant's specification, page 18, lines 16-19). More specifically, the length of keyed aperture 75 can be calculated to allow unlocking to occur at any desired cooling temperature based upon the expansion and contraction characteristics of thermally responsive element 66 (Applicant's specification, page 18, lines 19-21). Thus, by virtue of the interrelationship of component parts and their functions in Applicant's oven door locking mechanism 78, there is achieved substantially different lock and unlock temperatures for the oven door.

VI. Issues

The issue on appeal is whether claims 7-17 are patentable under 35 U.S.C. §102(b) over Siegel.

VII. Grouping of the Claims

For the purposes of this appeal, claims 7-17 do not stand or fall together. Specifically, dependent claims 8-16 and independent claim 17 recite specific features that lend patentable distinctiveness in addition to the features recited in claim 7. These additional specific features will be noted in the Argument.

VIII. Argument

Claims 7-17 stand rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Siegel. It is respectfully submitted that the Examiner has erred in the rejection of appealed claims 7-17 under 35 U.S.C. §102(b) for reasons fully developed as follows.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 613, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Thus, for the Siegel reference to anticipate each of Applicant's claims 7-17, the Siegel reference must expressly or inherently disclose every element recited in that claim.

However, Siegel fails to disclose each and every element of Applicant's claimed invention and, therefore, does not anticipate Applicant's claims 7-17. As elaborated below, the Examiner misinterpreted the components of Siegel's oven door locking mechanism in rendering the rejections, and rendered internally inconsistent rejections in attempting to read the claims upon Siegel.

Siegel's lock mechanism, as shown in Fig. 4, includes a bimetal coil 46, a rod (lock member) 52 firmly affixed to one end of coil (thermal element) 46, an arm 56 firmly affixed to rod 52, and a locking plate 58 freely rotatable around rod 52, but "fixedly carried" by arm 56 through an arcuate slot 60 and a pin 62 (Siegel col.3, lines 51-72). The outer end 48 of bimetal coil 46 is restrained by a suitable restrainer 50. The restrainer is immovably fixed to base plate 10 (seen in Fig. 1) and rod 52 extends

through restrainer 50 for free rotation therein (Siegel col.3, lines 55-61). Between the head portion of pin 62 and plate 58 is a spring 64 which exerts tension such that the "motion of arm 56 is transmitted through pin 62 to plate 58, whereby the plate 58 will be caused to rotate with arm 56." (Siegel col.3, line 72-col.4, line 2). Thus, plate 58, through arm 56, rotates, via pin 62, in response to the rotating coil 46 which, in turn, responds to the heating or cooling of the oven. Plate 58 also has a lock element 66 and a lug 68 (numbered in Fig. 1), both of which rotate with plate 58 to abut a jam 30 during heating and lock the oven door (Siegel Fig. 2).

In finally rejecting claim 7, the Examiner, with reference to the Examiner's marked-up Fig.4, alleged,

"Siegel ¶ discloses a clutch mechanism (Fig. 4 and col. 3, lines 60-75), wherein a "clutch" is defined by the *Merriam-Webster's Collegiate Dictionary* 10th Edition as a coupling used to connect and disconnect a driving and driven part of a mechanism. . . . As it concerns claim 7, Siegel discloses a clutch mechanism (Fig. 4) wherein said clutch mechanism comprises a thermally responsive element (46), a clutch (52), and a lock member (50), and a first spring (64) in contact with said lock member via pin (62), wherein said lock member defines a first side of said clutch as a keyed aperture (Z), said keyed aperture¶ is engaged via clutch (52) with said thermally responsive element, whereby the oven door locking mechanism locks and unlocks the oven door at substantially different temperatures" (Office Action dated April 8, 2003, page 3)

In maintaining the rejection, the Examiner stated in the Advisory Action:

"The Siegel reference discloses ¶ an oven door locking mechanism within the meaning of the applicant's claims. In regard¶ to claim 7, the Examiner directs the Applicant's attention to lock member 50 defining a first side of the clutch assembly and having a keyed aperture (Z). As it concerns claim 17, the Examiner directs the Applicant's attention to [the] clutch having a lock member (52) on its first side:

wherein said lock member has a recess (W). Siegel's second side of said clutch member includes a thermally responsive element (46): wherein the center of said element includes slots to receive the tabs extending on both sides of recess (W)." (Advisory Action dated September 2, 2003, page 2).

Regarding claim 7, even accepting the Examiner's reading of the claims on the parts shown by Siegel, Siegel fails to disclose a "first spring in contact said lock member, wherein said lock member defines a first side of said clutch..." The Examiner's reference to spring 64 in Siegel's Fig.4 is misplaced, as spring 64 is only in contact with pin 62, and not with rod 52 which the Examiner alleges to be the "clutch", nor with the restrainer 50 which the Examiner alleges to be the "lock member". More specifically, spring 64 is adjacent to pin 62, and does not contact either pin 62 or lock member 50. Moreover, pin 62 is remote from and fails to exert any tension on either of rod ("clutch") 52 or restrainer ("lock member") 50. Accordingly, Siegel fails to disclose the claimed combination and relationship of features of claim 7 and thus cannot anticipate that claim.

In addition, the Examiner inconsistently and erroneously mislabeled the components of Siegel's lock in rejecting Applicant's claims and, therefore, these rejections are improper and cannot stand. With respect to claim 7, and with reference to the Examiner's marked-up Siegel Fig. 4, the Examiner has stated that Siegel's rod 52 is a "clutch" (see the above quote from the final Office Action).¹ However, the Siegel reference does not refer to component 52 as a "clutch", nor does Siegel suggest that

¹ The Examiner has also stated, in rejecting claims not now at issue, that "A in Fig. 4" is a "clutch". "A", however, as penciled in by the Examiner does not point to any specific component structure but rather Siegel's entire mechanism.

rod supplies, at either end thereof, anything that a person of skill would consider a "clutch" function. The Examiner's quotation from the Merriam-Webster's Collegiate Dictionary, 10th Edition, is informative. It defines a clutch as: "a coupling used to connect and disconnect a driving and driven part of a mechanism". Consistent with this definition, Applicant's claims use "clutch" to refer to a selective connection or engagement between two "sides"; claim 7 recites that one "side" of the clutch is the lock member, and dependent claim 10 recites that the thermally responsive element is the other "side"; claim 17 defines the first and second "sides" as a slot in the thermally responsive element and a recess in the lock member. Applicant is clearly using "clutch" to mean a "coupling to connect and disconnect a driving and driven part." To read Applicant's claims upon Siegel, the Examiner must find such a mechanism, including two "sides" which selectively couple, connect or engage to create a clutch function. The Examiner has not done this; instead, the Examiner has used "clutch" to refer to parts, rather than to a point of engagement of parts, and has not identified the "sides" of the "clutch" to which he refers.

Adding to this confusion, the Examiner, in the Advisory Action, referred to both of Siegel's components 50 and 52 as "lock members." This makes it impossible to analyze how the Examiner proposes to relate Siegel's components to specific elements of Applicant's claimed invention. Applicant submits the Examiner has not met his burden of pointing out specific disclosure in Siegel sufficient to teach each and every element of Applicant's claims.

Applicant's claim 8 recites details of the first "side" of the clutch: "the keyed aperture comprises an annular recess." In rejecting claim 8, the Examiner, in the

final office action, stated "Siegel's keyed aperture (Z) comprises an annular recess. However, in the Advisory Action, the Examiner refers to "W" as the "recess". Which structure in Siegel does the Examiner consider the "recess"? If "Z" is the recess – assuming for the moment that a hole could be referenced as an "annular recess" – Z is neither part of the "lock member" rod 52, nor does Z define a first side of a clutch; therefore, Siegel cannot anticipate this recitation of Applicant's claim 8. If "W" is the recess, it is clearly not annular, even by the Examiner's definition, i.e., the recess does not extend circumferentially about rod 52, nor does W define a first side of a clutch, as there is nothing in Siegel to suggest that W has any function for selective engagement and disengagement ("connecting and disconnecting", per the Examiner's dictionary definition); by any reading of Siegel, bimetal coil 46 is supposed to remain captured in W for the life of the device. Thus, Applicant respectfully asserts that Siegel fails to teach an "annular recess" used as the "keyed aperture" and, therefore, fails to anticipate Applicant's claim 8.

Applicant's claim 9 recites "[the] first end [of the lock member] defines said keyed aperture." In rejecting claim 9, the Examiner, in the final office action, stated "Siegel's lock member (50) has a first end (F) and a second end (S), and said first end defines said keyed aperture (60). See Fig. 4." This statement is further evidence that the Examiner has failed to understand the inter-relationship between the components of Siegel's oven lock. First, there is no (60) in the restrainer 50 on Siegel Fig. 4. Assuming, the Examiner was referring to (Z) as the keyed aperture, "Z" is merely an restraining opening on restraining plate 50, as illustrated in Fig. 4 and described in the Siegel specification. That opening Z is not part of any lock member (Siegel's lock

member is elements 66 and 68 on the opposite ends of the device), and furthermore, restraining plate 50 does not define a first end of a clutch, as discussed above with respect to claim 8. Were the Examiner referring to "W" as the keyed aperture on rod 52, as illustrated in Fig. 4, Applicant's acknowledge that this could be construed as a "keyed aperture." However, rod 52 has been called the "clutch" (see above) and is not on the "lock member". Therefore, again, Siegel cannot anticipate Applicant's claim 9 as Siegel fails to disclose a keyed aperture on an end of a lock member. Thus, Applicant respectfully asserts that Siegel does not anticipate Applicant's claim 9.

Applicant's claim 10 recites "said thermally responsive element defines a second side of said clutch as a slot, said slot in engagement with said keyed aperture." In rejecting claim 10, the Examiner, in the final office action, stated "Siegel's thermally responsive element defines a second side of said clutch as a slot (W), said slot in engagement with said keyed aperture." Again the Examiner has erred in alleging that Siegel's lock discloses a thermally responsive element having a slot. In rendering the rejection, the Examiner alleged bimetal coil 46 to be the "thermally responsive element"; slot (W) is not on bimetal coil 46, but rather is defined by rod 52. Again, which component in Siegel does the Examiner call the "thermally responsive element"? One of ordinary skill in the art would clearly recognize Siegel's thermally responsive element as bimetal coil 46. However, coil 46 fails to include a slot, and particularly fails to include a "slot in engagement with said keyed aperture" of rod 52, or any other part. Thus, Applicant respectfully asserts that Siegel fails to teach this particular claimed feature of Applicant's invention and, therefore, fails to anticipate Applicant's claim 10.

Applicant's claim 11 recites "said first spring encompasses said lock member." In rejecting claim 11, the Examiner, in the final office action, defined the term "encompass" as "include", and asserts that "Siegel's first spring [64] includes lock member (50) via pin (62)". Even accepting the Examiner's definition of "encompass" as "include", this is nonsensical. Spring 64 is separated from lock member 50 by at least 3 intervening parts; moreover, spring 64 is not an assembly that "includes" restrainer 50; it is a separate part. The Examiner's assertion that "encompass" should be defined as "include" does not help to read the elements of claim 11 onto Siegel; it merely enhances the confusion of the rejection. Applicant notes that "encompass" also means "to form a circle or ring around, surround, to enclose, to envelop" (online dictionary, Dictionary.com, 2003). That is clearly the relationship between spring 45 and lock member 72 shown in Applicant's drawings. However, as illustrated in Siegel Fig. 4, the Examiner's "first spring" 64 clearly does not surround, form a ring around or otherwise "encompass" rod 52; it does not even physically contact rod 52. Moreover, spring 64 encompasses only pin 62, and pin 62 is clearly not a "lock member", as illustrated in Fig. 4 and described in Siegel's specification. Accordingly, spring 64 cannot "include" lock member 50, as the Examiner alleged. Thus, Applicant respectfully asserts that Siegel fails to teach this particular claimed feature of Applicant's invention and, therefore, fails to anticipate Applicant's claim 11.

Applicant's claim 12, referencing claim 10, recites "said slot is elongated." In rejecting claim 12, the Examiner, in the final office action, alleged that slot (W) is elongated. While slot "W" is indeed elongated, it is not part of the thermally responsive element in Siegel's lock, as noted above. Further, Siegel's coil 46 fails to include any

slot, let alone an elongated slot. Thus, Applicant respectfully asserts that Siegel fails to teach this particular claimed feature of Applicant's invention and, therefore, fails to anticipate Applicant's claim 12.

Applicant's claim 13 recites "a mounting bracket wherein the first spring is affixed to said mounting bracket." In rejecting claim 13, the Examiner, in the final office action, stated that "Siegel's oven locking mechanism further comprises ... a mounting bracket (10) wherein said first spring is affixed to said mounting bracket via pin (62)." Applicant respectfully submits that the Examiner's statement is in error. Particularly, it is clear from Siegel's Fig. 3 and Fig.4 that spring 64 is not "affixed" to any mounting bracket, let alone bracket 10, as the Examiner has alleged. Spring 64 and pin 62 can be seen sitting separate from and above bracket 10 in the cross-sectional Fig. 3. Thus, Applicant respectfully asserts that Siegel fails to teach this particular claimed feature of Applicant's invention and, therefore, fails to anticipate Applicant's claim 13.

Applicant's claim 14 recites "said thermally responsive element is a bimetallic leaf secured at a first end and defining said slot at a second end." In rejecting claim 14, the Examiner, in the final office action, stated "Siegel's thermally responsive element is a bimetallic leaf secured at a first end (48) and defining said slot at a second end". However, again, as discussed above with respect to claims 10 and 12, Siegel's bimetal coil (46) fails to include a slot at either of its ends. The "slot" to which the Examiner has previously referred to is "W", and it is part of rod 52, not coil 46. Thus, Applicant respectfully asserts that Siegel fails to teach this particular claimed feature of Applicant's invention and, therefore, fails to anticipate Applicant's claim 14.

Applicant's claim 15 depends from claim 13, which in turn depends from independent claim 7. Claim 15 recites "said lock hole comprises a receiver member" (referring to the lock hole introduced in claim 13). Applicant's claim 16, dependent on 15, further recites "said receiver member is a bushing." In rejecting claim 13, the Examiner, in the final office action, stated "Siegel's oven door locking mechanism further comprises a latch mechanism define a lock hole (generally H in Fig. 3) adapted to receive said lock member." In rejecting claim 15, the Examiner stated "Siegel's lock hole comprises a receiver member (R), see Fig. 3." Once again, the Examiner has mislabeled and failed to appreciate the various components disclosed in the Siegel lock mechanism. Particularly, "H" on the Examiner's markup of Fig. 3 is not a lock hole; it is merely a mounting hole that the rod 52 passes through, it is not expressly labeled in any figure or literally described as a "lock hole" in the specification. (The locking function of the Siegel device is obtained by the elements 66 and 68, which rotate into and out of engagement with the jam 30 that moves with the handle 22 as illustrated by comparing Figs. 1 and 2.) Further, while "R" in the Examiner's markup of Fig. 3 appears to receive an end of rod 52, R is not included in the asserted "lock hole" H, and neither of Figs 3 and 4, nor the specification describe H as having a receiver member, nor do they describe R as a "receiving structure" associated with H. (Clearly, nothing in H or R provide the function of guiding or exert added force on a lock member as it enters a lock hole in locking an oven door, as is disclosed in Applicant's specification.) Regarding claim 16, by virtue of failing to disclose a receiver member, Siegel further fails to disclose a bushing as a receiver member. Thus, Applicant respectfully asserts

that Siegel fails to teach these particular claimed features of Applicant's invention and, therefore, fails to anticipate Applicant's claims 15 and 16.

Applicant's claim 17 is an independent claim and recites many of the elements of claims 7, 8, 10, 13 and 16. Particularly, claim 17 recites "a thermally responsive element defining a second side of a clutch as a slot"; "said lock hole comprising a bushing"; and "a mounting bracket comprising a first spring, said first spring encompasses said lock member." In rejecting claim 17, the Examiner, in the final office action, stated "Claim 17 is rejected as set forth above", indicating the same basis utilized to reject claims 7-16 were used to reject claim 17. However, Siegel fails to disclose a thermally responsive element including a slot; a lock hole having a bushing as a receiver member; and a mounting bracket comprising a first spring, which encompasses a lock member, as previously discussed herein. Accordingly, Siegel fails to fails to disclose multiple elements recited in independent claim 17, and therefore cannot anticipate Applicant's claim 17.

With respect to any potential assertions of obviousness that the Examiner might make, Applicant notes that Siegel's oven door lock, in addition to be being completely different structurally from Applicant's door lock, functions in a manner totally different than Applicant's mechanism, and results in potentially dangerous lock and unlock temperatures. These functions of Applicant's claimed invention form part of the invention as a whole which must be considered in evaluating any assertion of obviousness.

Mechanically, Siegel's oven lock structure and design is faulty because it locks the oven at a temperature equal to or lower than that at which it unlocks. As

shown in Siegel's Fig.1, where the oven door is unlatched at a temperature below the locking temperature, the plate 58 and lock element 66 are in a direction opposite the latch mechanism and do not influence the position and movement of the latch. Fig. 2 represents the locking mechanism in a "heating" oven, with the door at a "locking" temperature, where plate 58 has rotated to cause element 66 and lug 68 to abut jam 30, preventing the door from being unlatched, and further limiting rotation of plate 58 as heating progresses (Siegel col.4, line 19-23). Fig. 6 represents the locking mechanism when the "heating cycle is completed", and the oven has reached full temperature, such as about 1000°C during a self cleaning mode, and arm 56 has rotated further along arcuate slot 60 in response to continued heating beyond the lock temperature. Fig. 5 represents the locking mechanism when the oven begins to cool during the cooling cycle where "the pressure exerted by spring 64 upon plate 58 and arm 56 will cause the arm 56 to move the plate 58 simultaneously in the reverse direction. This, therefore, causes the lock 66 to be moved out of path of movement of jam 30 within a relatively short period of time", thus allowing the oven door to be unlatched and opened. (Siegel col.4, lines 54-59). What actually happens, as illustrated, is as the oven is heated, thermal coil 46 rotates causing arm 56 and plate 58 to rotate with lock member 52 against jam 30 and lock the oven at a temperature determined by the degree and manner of heating the oven. Once the heating cycle is complete and the oven begins to cool, the retracting thermally responsive coil 46 causes reverse rotation of lock member 52, arm 56, and plate 58 (through the tension of spring 64 on pin 62) and immediately releases the "blocked" movement of jam 30 thereby allowing the oven door to be unlocked. Accordingly, the oven door can unlock at dangerously high temperatures (at

a temperature slightly lower than the highest temperature achieved), and in any event, at a temperature higher than the lock temperature. This dangerous situation occurs because there is nothing structurally preventing the reverse rotation of plate 58 upon cooling. The tension exerted on pin 62 via spring 64 causes immediate unlock once the oven has begun to cool. However, in doing so, Siegel's unlock temperature is determined by the extent of heating.

The lock and unlock temperatures of Siegel's locking mechanism are also dependent on the uniformity, or lack thereof, of the oven temperature. Specifically, the lock-unlock temperature differential will be greatest in an oven heated slowly, in which the bimetal coil 46 has had time to fully heat and pin 62 has as a result progresses fully toward the condition shown in Fig. 6; the differential will be smaller in an oven heated and cooled quickly, in which bimetal coil 46 does not fully heat prior to cooling of the oven. It follows that if the manner of heating was altered and the Siegel oven was heated only slightly beyond the lock temperature and cooled, it would unlock at a temperature dependent upon the manner of heating and cooling.

In contrast, Applicant's oven door locking mechanism locks and unlocks the oven door at substantially different temperatures, regardless of the history of the heating and cooling cycles of the oven. Particularly, since Applicant's thermally responsive element must traverse the entire length of the lock member's keyed aperture to move from a locked to unlocked condition or vice-versa, the oven door will not unlock immediately upon cooling. Also, as the user may chose the shape and dimension of the slot, as well as the metallic content of the thermally responsive element, lock and unlock temperature can be controlled to specific absolute ranges,

and to always provide a desired temperature differential between lock and unlock temperature, as previously discussed in the Summary section of this Brief on Appeal.

Thus, Applicant's oven door locking mechanism is not only different from Siegel's oven door locking mechanism in physical structure, but it is also different in how it functions to lock and unlock the oven door. Applicant thus submits that no rejection based upon obviousness can be maintained from the Siegel prior art.

IX. Conclusion

For all of the reasons stated above, Applicant respectfully requests that the Board reverse the Examiner's rejection of claims 7-17.

Respectfully submitted,

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APPENDIX OF CLAIMS

7. (Twice Amended) An oven door locking mechanism comprising:

a clutch mechanism comprising a thermally responsive element, a clutch, and a lock member; and

a first spring in contact with said lock member,

wherein said lock member defines a first side of said clutch as a keyed aperture, said keyed aperture is engaged with said thermally responsive element, whereby the oven door locking mechanism locks and unlocks an oven door at substantially different temperatures.

8. (Original) The oven door locking mechanism of claim 7, wherein the keyed aperture comprises an annular recess.

9. (Original) The oven door locking mechanism of claim 7 wherein said lock member has a first end and a second end, said first end defines said keyed aperture.

10. (Original) The oven door locking mechanism of claim 7 wherein said thermally responsive element defines a second side of said clutch as a slot, said slot in engagement with said keyed aperture.

11. (Original) The oven door locking mechanism of claim 7 wherein said first spring encompasses said lock member.

12. (Original) The oven door locking mechanism of claim 10 wherein said slot is elongated.

13. (Original) The oven door locking mechanism of claim 7 further comprising:
a latch mechanism defining a lock hole adapted to receive said lock member;
and
a mounting bracket wherein said first spring is affixed to said mounting bracket.

14. (Original) The oven door locking mechanism of claim 10 wherein said thermally responsive element is a bimetallic leaf secured at a first end and defining said slot at a second end.

15. (Original) The oven door locking mechanism of claim 13 wherein said lock hole comprises a receiver member.

16. (Original) The oven door locking mechanism of claim 15 wherein said receiver member is a bushing.

17. (Original) An oven door locking mechanism comprising:

a clutch;

a thermally responsive element defining a second side of said clutch as a slot;

a lock member defining a first side of said clutch as a recess, said recess is engaged with said slot;

a latch mechanism defining a lock hole adapted to receive said lock member at end opposite said recess, said lock hole comprises a bushing; and

a mounting bracket comprising a first spring, said first spring encompasses said lock member.